



## **Economic Impact Analysis Virginia Department of Planning and Budget**

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### **9 VAC 25-720 Water Quality Management Planning Regulation Department of Environmental Quality July 14, 2006**

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#### **Summary of the Proposed Regulation**

The State Water Control Board (the board) proposes to revise the nutrient waste load allocations for the Fredericksburg Wastewater Treatment Facility (WWTF) in the existing Water Quality Management Planning Regulation (9 VAC 25-720). The revised nitrogen and phosphorus waste load allocations will reflect the facility's current design flow capacity of 4.5 millions gallons per day (MGD).

#### **Results of Analysis**

There is insufficient data to accurately compare the magnitude of the benefits versus the costs. Detailed analysis of the benefits and costs can be found in the next section.

#### **Estimated Economic Impact**

The existing Water Quality Management Planning Regulation (9 VAC 25-720), which was amended in November 2005, has listed nutrient waste load allocations for significant dischargers in several Chesapeake Bay river basins in order to restore the Chesapeake Bay and its tidal rivers. The nutrient waste load allocations are calculated based on a combination of stringent treatment technology (concentration-based performance) and each facility's design flow, which is defined as the capacity authorized by the VPDES<sup>1</sup> permit and certified for operation under the Sewage Collection and Treatment Regulations (9 VAC 25-790-50). The Watershed General Permit Regulation<sup>2</sup> (WGPR) now under development proposes that

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<sup>1</sup> VPDES: Virginia Pollutant Discharge Elimination System

<sup>2</sup> General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia (9VAC 25-820).

compliance with the waste load allocations shall be achieved as soon as possible after the effective date of the WGPR regulation, but no later than January 1, 2011.

Fredericksburg WWTF, which is one of the significant dischargers to the Rappahannock river basin, completed an upgrade in 1994. A Certificate to Operate was issued for a 4.5 MGD capacity of sewage treatment, but the facility was authorized by the VPDES permit to discharge at a design flow capacity of 3.5 MGD. Therefore, the nutrient waste load allocations for Fredericksburg WWTF in the existing Water Quality Management Planning Regulation is based on a design flow capacity of 3.5 MGD, which are 42,638 lbs/year for nitrogen and 3,198 lbs/year for phosphorus. Subsequent re-issuance of the VPDES permit authorized the discharge of 4.5 MGD, but only after repeal of the 208 Water Quality Management Plan<sup>3</sup>. In 2003 the 208 Plan was repealed. Now that the Fredericksburg WWTF has a 4.5 MGD design flow certified for operation and authorized by the VPDES permit, the board proposes to adjust their nutrient waste load allocations based on the updated design flow of 4.5 MGD. The total nitrogen waste load allocation for Fredericksburg WWTF will be increased from 42,638 lbs/year to 54,820 lbs/year and the total phosphorus waste load allocation will be increased from 3,198 lbs/year to 4,112 lbs/year.

The adjustment of nutrient waste load allocations based on the updated design flow will allow the Fredericksburg WWTF to make full use of its sewage treatment equipment and investments in capacity and will benefit the facility. On the other hand, the increase in nitrogen and phosphorus waste load allocations for the Fredericksburg WWTF will very likely result in less reduction in nitrogen and phosphorus discharges and less restoration of water quality in the Rappahannock river than the 2005 Water Quality Management Planning Regulation amendments could otherwise achieve.<sup>4</sup> This may, to some extent, reduce the benefit that the 2005 Water Quality Management Planning Regulation amendments could otherwise provide for public health, commercial fisheries, tourism and recreation in the Rappahannock river basin. Since the increases in waste load allocation, which is 12,182 lbs/year for total nitrogen and 934 lbs/year for total phosphorus, are about 2% of the total annual nutrient waste load allocations for

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<sup>3</sup> In accordance with Section 208 and Section 303(e) of the Clean Water Act, the State Water Control Board has developed 18 water quality management plans. Many were developed in the 1970s. Although some have been amended and updated to reflect current conditions, many have now become outdated.

Rappahannock river basin, the reduced benefit from the proposed amendment will likely be small. Because the lost benefit from less nutrient reductions is not easily quantifiable and the gained benefit for Fredericksburg WWTF is not available, it is not known whether the net benefit is positive or not.

## **Businesses and Entities Affected**

Fredericksburg WWTF will benefit from the proposed regulatory change by being able to make full use its sewage treatment equipment and investments in capacity. On the other hand, the revised nutrient waste load allocations may result in less reduction of nitrogen and phosphorus discharges and less improvement of water quality in the Rappahannock than the current waste load allocations could achieve. This may cause slight benefit reduction that the 2005 Water Quality Management Planning Regulation amendments could otherwise generate for businesses and entities involved in industries such as commercial fisheries, tourism and recreation, and boat building and repair in Rappahannock river.

## **Localities Particularly Affected**

The City of Fredericksburg will be particularly affected by the proposed regulatory changes.

## **Projected Impact on Employment**

The adjustment of nutrient waste load allocations based on the updated design flow will allow the Fredericksburg WWTF to make full use its sewage treatment equipment and may increase the number of people employed by the facility. On the other hand, the proposed regulatory change may have a slight negative effect on the employment in industries such as commercial fisheries, tourism and recreation, and boat building and repair compared with the current waste load allocations.

## **Effects on the Use and Value of Private Property**

The revised nutrient waste load allocations will likely result in less reduction of nutrients discharges and thus less improvement in the Rappahannock river, which may have a slight

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<sup>4</sup> According to the Department of Environmental Quality, total nitrogen discharges by the Fredericksburg WWTF were 63,830 lbs/year in 2004, before the 2005 adoption of the Water Quality Management Planning Regulation amendments.

negative impact on the asset value of businesses in commercial fisheries, tourism and recreation, boat building and repair, as well as the value of residential properties in surrounding areas.

### **Small Businesses: Costs and Other Effects**

The proposed regulation will likely not have any significant direct impact on small businesses. However, small businesses involved in commercial fisheries, tourism and recreation, boat building and repair may be slightly affected due to less reduction of nutrients discharges to the Rappahannock river.

### **Small Businesses: Alternative Method that Minimizes Adverse Impact**

The proposed regulatory change revises the nutrient waste load allocations for Fredericksburg WWTF based on the facility's current design flow capacity and may slightly affect small businesses involved in commercial fisheries, tourism and recreation, boat building and repair in the Rappahannock river. There is no alternative that can have a smaller adverse impact.

### **Legal Mandate**

The Department of Planning and Budget (DPB) has analyzed the economic impact of this proposed regulation in accordance with Section 2.2-4007.H of the Administrative Process Act and Executive Order Number 21 (02). Section 2.2-4007.H requires that such economic impact analyses include, but need not be limited to, the projected number of businesses or other entities to whom the regulation would apply, the identity of any localities and types of businesses or other entities particularly affected, the projected number of persons and employment positions to be affected, the projected costs to affected businesses or entities to implement or comply with the regulation, and the impact on the use and value of private property. Further, if the proposed regulation has adverse effect on small businesses, Section 2.2-4007.H requires that such economic impact analyses include (i) an identification and estimate of the number of small businesses subject to the regulation; (ii) the projected reporting, recordkeeping, and other administrative costs required for small businesses to comply with the regulation, including the type of professional skills necessary for preparing required reports and other documents; (iii) a statement of the probable effect of the regulation on affected small businesses; and (iv) a description of any less intrusive or less costly alternative methods of achieving the purpose of the

regulation. The analysis presented above represents DPB's best estimate of these economic impacts.